WHAT IS CLAIMED IS:

1. An image interpolation method, comprising:

acquiring a first image pair, comprising two key frames, and first corresponding point data between the two key frames of the first image pair;

acquiring a second image pair, comprising two key frames, and second corresponding point data between the two key frames of the second image pair; and

generating an intermediate frame by interpolation, wherein the interpolation utilizes positional relations of a first axis and a second axis and the first corresponding point data and the second corresponding point data,

the first axis being determined temporally or spatially between the two key frames of the first image pair, and

the second axis being determined temporally or spatially between the two key frames of the second image pair.

2. A method according to Claim 1, wherein the first image pair and the second image pair are determined so that the first axis and the second axis do not lie on a same line.

3. A method according to Claim 1, wherein one of the two key frames in the first image pair and one of the two key frames

in the second image pair are common, and the interpolation utilizes positional relations based on a triangle having the first axis and the second axis as two sides thereof.

4. A method according to Claim 1, wherein the first image pair and any of the two key frames in the second image pair do not have any key frames in use, and the interpolation utilizes positional relations based on a quadrilateral having the first axis and the second axis as two sides opposite to each other.

5. A method according to Claim 4, wherein a point Pc which represents the intermediate frame within the quadrilateral is such that the point Pc divides at a ratio of (1-t):t a line segment between a point Q, which divides a side of the quadrilateral connecting two points corresponding to the two key frames of the first image pair at a ratio of s:(1-s), and a point R, which divides a side of the quadrilateral connecting two points corresponding to the two key frames of the second image pair, where s and t are real numbers between 0 and 1.

6. A method according to Claim 1, further comprising: acquiring a positional relation between the intermediate frame, the two key frames of the first image pair and the two

key frames of the second image pair,

wherein the interpolation is performed based on said positional relation.

7. A method according to Claim 1, wherein the two key frames of the first image pair and the two key frames of the second image pair are images photographed respectively from a same view point but at different times.

8. A method according to Claim 1, wherein the two key frames of the first image pair and the two key frames of the second image pair are images photographed respectively from different viewpoints.

9. An image interpolation method, comprising:

computing a matching between a first image pair comprised of two key frames, and detecting first corresponding point data between the two key frames of the first image pair;

computing a matching between a second image pair comprised of two key frames, and detecting second corresponding point data between the two key frames of the second image pair; and

generating an intermediate frame by interpolation, by utilizing positional relations of a first axis and a second

axis, the first corresponding point data and the second corresponding point data,

wherein the first axis is determined temporally or spatially between the two key frames of the first image pair, and

the second axis is determined temporally or spatially between the two key frames of the second image pair.

10. A method according to Claim 9, wherein said matching is computed pixel by pixel between the two key frames.

11. A method according to Claim 10, wherein said matching is computed pixel by pixel based on correspondence between critical points detected through respective two-dimensional searches on the two key frames.

12. A method according to Claim 11, wherein said computing and detecting includes:

multiresolutionalizing the two key frames by respectively extracting the critical points;

performing a pixel-by-pixel matching computation on the two key frames, at same resolution levels; and

acquiring a pixel-by-pixel correspondence relation at a finest level of resolution while inheriting a result of a

pixel-by-pixel matching computation in a different resolution level.

13. An image interpolation apparatus, comprising:

a unit which stores a plurality of key frames;

a unit which acquires temporal or spatial position data on an intermediate frame, in relation to the key frames; and

an intermediate frame generator which generates an intermediate frame by an interpolation processing, based on corresponding point data for a first image pair comprised of two key frames and a second image pair comprised of two key frames, and the position data,

wherein the first image pair and the second image pair are determined so that a first axis determined temporally or spatially between the two key frames of the first image pair and a second axis determined temporally or spatially between the two key frames of the second image pair do not lie on a same line.

14. An apparatus according to Claim 13, wherein said intermediate frame generator generates an image A corresponding to a point Q which lies on a line segment connecting two points that correspond to the two key frames of the first image pair, by the interpolation processing at a

ratio of s:(1-s), and then generates an image B corresponding

to a point R which lies on a line segment connecting two

points that correspond to the two key frames of the second

image pair, by the interpolation processing at a ratio of

s:(1-s), and then generates an intermediate frame by

performing the interpolation processing on the image A and

image B at a ratio of (1-t):t, where s and t are real numbers

between 0 and 1.

15. An apparatus according to Claim 13, further comprising a

matching processor which generates the corresponding point

data.

16. An apparatus according to Claim 13, wherein the two key

frames of the first image pair and the two key frames of the

second image pair are images photographed respectively from a

same viewpoint but at different times.

17. An apparatus according to Claim 13, wherein the two key

frames of the first image pair and the two key frames of the

second image pair are images photographed respectively from

different viewpoints.

18. An apparatus according to Claim 13, further comprising a

user interface by which to input externally a specification regarding a temporal or spatial position of the intermediate frame to be generated.

19. A method according to Claim 1, further comprising a user interface by which to input externally a specification regarding a temporal or spatial position of an intermediate frame to be generated.

20. A computer program executable by a computer, the program comprising the functions of:

acquiring a first image pair, comprising two key frames, and first corresponding point data between the two key frames of the first image pair;

acquiring a second image pair, comprising two key frames, and second corresponding point data between the two key frames of the second image pair; and

generating an intermediate frame by interpolation, wherein the interpolation utilizes positional relations of a first axis determined temporally or spatially between the two key frames of the first image pair and a second axis determined temporally or spatially between the two key frames of the second image pair, the first corresponding point data and the second corresponding point data.